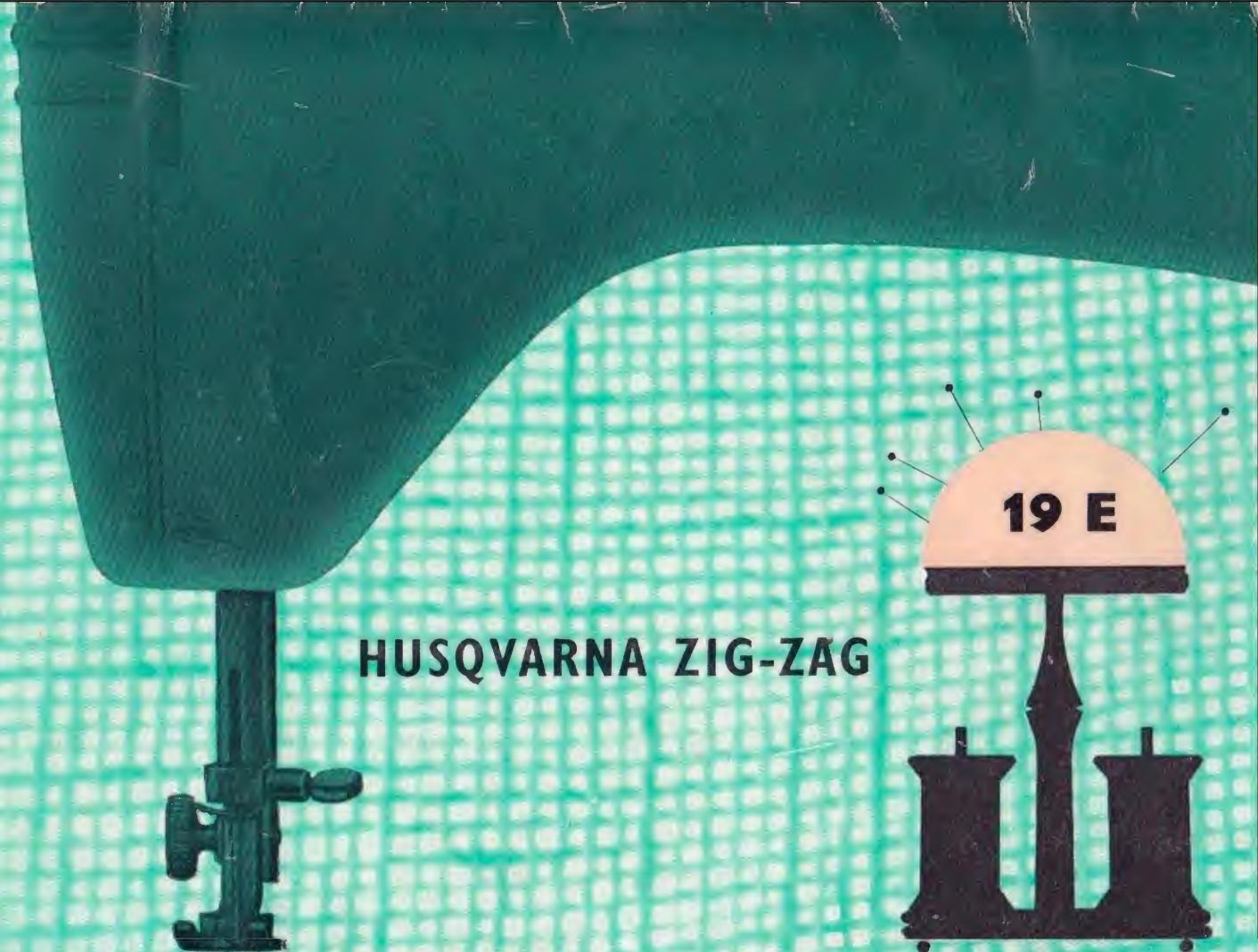


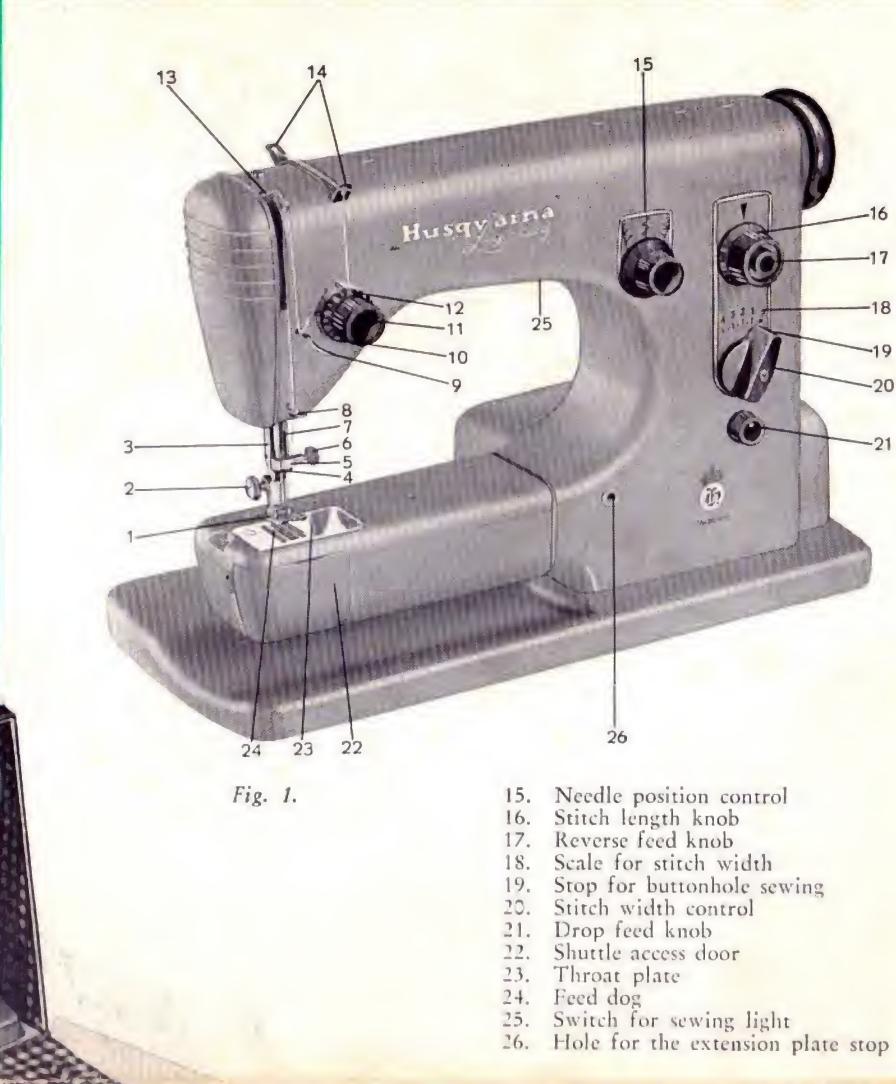
OPERATING MANUAL



HUSQVARNA ZIG-ZAG



1. Presser foot
2. Presser foot screw
3. Presser bar
4. Thread guide
5. Needle clamp
6. Needle set screw
7. Needle bar
8. Thread guide
9. Slash thread regulator
10. Throat tension discs
11. Graduated tension regulator knobs
12. Take-up spring
13. Take-up lever
14. Thread guides



15. Needle position control
16. Stitch length knob
17. Reverse feed knob
18. Scale for stitch width
19. Stop for buttonhole sewing
20. Stitch width control
21. Drop feed knob
22. Shuttle access door
23. Throat plate
24. Feed dog
25. Switch for sewing light
26. Hole for the extension plate stop



- S 15229 Jointed presser foot (attached to the machine) for straight and zigzag stitching
- S 15428 Buttonhole tool
- S 15399 Buttonhole knife
- S 15400 Darning foot
- S 15395 Presser foot for zipper fastener
- S 15236 Hemmer for roll seam
- S 15420 Edge guide
- S 12111 Screw for attachments



S 15229



S 15428



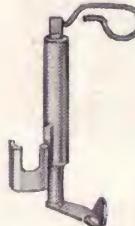
S 15236



S 15395



S 15399



S 15400



S 15420



S 12111

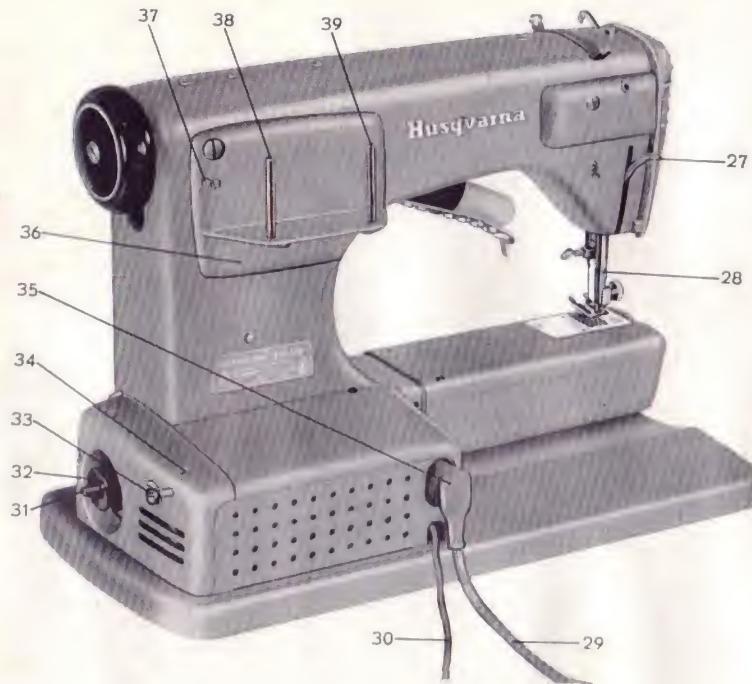


Fig. 2.



- 27. Pressure foot lifter
- 28. Thread cutter
- 29. Cord to electric wiring outlet
- 30. Foot control cord
- 31. Spindle for bobbin winding
- 32. Speed control for slow sewing
- 33. Tension discs and thread guide for bobbin winding
- 34. Screw for adjusting tension discs
- 35. Plug for foot control cord
- 36. Access door
- 37. Thread guide for bobbin winding
- 38. Spool pin
- 39. Spool pin
- 40. Stop for extension plate



We reserve the right to change at any time the contents
of the box of attachments and accessories.

Standard attachments and accessories

S 15338 Box for attachments	S 15406 Screwdriver, large
S 15229 Jointed presser foot (attached to the machine)	S 15555 Cleaning brush
for straight and zigzag stitching	S 15415 Oilcan
S 15428 Buttonhole foot	S 15395 Presser foot for zipper fastener
S 15399 Buttonhole knife	S 15236 Hemmer for roll seam
S 15460 Darning foot	S 15420 Edge guide
3 Needles	S 12111 Screw for attachments
6 Bobbins S 11770 (+1 in the machine)	1 Operating manual
3046 Screwdriver, small	1 Needle box

Special attachments

can be supplied upon request at extra cost

S 15100 Jointed presser foot for straight stitching	S 15433 Throat plate for $\frac{7}{32}$ " eyelets
3019 Gathering foot	3028 Embroidery frame, dia. 4"
S 15801 Pattern stitching presser foot	3029 Embroidery frame, dia. 6"
S 15237 Button foot	3030 Embroidery frame, dia. 8"
3035 Hemmer for straight and zigzag stitching	9001 Weaver's reed
S 15426 Twin-needle foot with 1 groove	S 15367 Hemstitcher
3005 Piping attachment	S 15818 Blindstitching plate
3002 Hemmer $\frac{3}{32}$ " straight seam	Twin-needle with $\frac{3}{32}$ " needle spread
S 15240 Hemmer for scalloping	Twin-needle with $\frac{1}{8}$ " needle spread
S 15423 Throat plate for $\frac{1}{8}$ " eyelets	Twin-needle with $\frac{5}{32}$ " needle spread
S 15432 Throat plate for $\frac{3}{16}$ " eyelets	Triple-needle with $\frac{7}{64}$ " needle spread
S 15419 Twin-needle foot with 3 grooves	} for twin-needle seams, packed S 15427 Raised seam attachment
1 Twin-needle with $\frac{5}{64}$ in. needle spread	

CUSACK'S SEWING CENTRE

140 BALCOMBE RD. MENTONE

Phone XF 2728 After Hrs. XF 1945

"NECCHI" SALVATORE SERVICE



This manual has been prepared to help you learn to use your new Husqvarna Zig-zag in such a way that you will get the very best out of it — to enable you to take full advantage of all the machine's special features which put skill into your fingers and make sewing fun.

Maybe you are thoroughly accustomed to sewing by machine and feel you can skip reading these instructions. Our advice is: Don't. We can say with fair certainty that you will find quite a number of ideas here that you hadn't thought of before, as well as simple sewing tricks that you had forgotten.

Have the machine in front of you as you read, and try out the various operations. Even if you have had some previous instruction in the use of your Husqvarna Zig-zag, this is probably the first time you have been alone with it — so here is a splendid opportunity to get acquainted. You'll find it well worth while, too. For this machine can be used for all kinds of sewing operations — sewing the most beautiful straight seams and doing ordinary zigzag stitching.

Even after you have acquired the general technique of sewing on the Husqvarna Zig-zag, you will probably want to consult the manual from time to time in regard to details. So keep this booklet always at hand — preferably in the case with the machine.

Good luck — and good sewing with your Husqvarna Zig-zag!

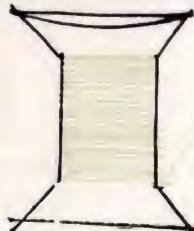
It's easy to get acquainted with your **HUSQVARNA** **ZIG-ZAG**

Needle and Thread

Unless a contrasting effect is desired, the stitching should match the fabric as closely as possible. It is therefore important to select a needle and thread suited to the material which is being sewn. The table on this page will help you to do this.



Needle System 705 (15×1) is the one used for the Husqvarna Zig-zag. In case you forget the number, it is engraved on a plate attached to the rear of the machine.



Shank

Eye

Point

Needle and thread selector

Grades	Sizes	Types of fabric and work	Size of thread		
			Cot-ton	Silk	Linen
System 750					
Fine	60	Delicate fabrics like georgette, chiffon, batiste, fine lace, fine linen and other sheer fabrics. For fine lingerie, infants' clothes and fine lace work.	100 to 150	00 and 000	twist
Me-dium-fine	70	Medium light-weight and sum- mertime fabrics. For house dresses, children's dresses, cottons, aprons, curtains.	80 to 100	0	twist
Me-dium	80	Dress silks and cottons, light weight to woollens and decora-tors' fabrics. For dressmaking and general house-hold sewing, men's dress shirts and light weight draperies.	60 to 80	A&B	twist
Light-heavy	90	Heavy cretonne, madras, muslin, brocades and quilts. For men's work shirts and other work clothes, heavy quilting and decorators' articles.	40 to 60	C	twist
Me-dium-heavy	100 110	Heavy woollens and suiting, lightweight canvas, bed ticking, upholstery and awning materials, slipcover fabrics. For men's suits, work and sports clothes, awnings, slipcovers, up-holstery and mattresses.	30 to 40	D	twist
Heavy	120	Heavy overcoating, duck, ticking, drills, canvas and sacking. For heavy washable uniforms, bedding for hospitals, hotels and camps. Extra heavy and coarse goods.	24 to 30	E	twist 60 to 80
Extra-heavy	130	For canvas bags and heavy can-vas products.	20 to 24	40 to 60	

How to insert a needle

Loosen the needle screw (A, Fig. 3). Insert the needle in the clamp (B) and push it up as far as it will go. See that the flat side of the needle is turned away from you. Tighten the screw securely, and check again to make sure that the needle is correctly inserted. The long groove over the needle's eye should be facing you.

When using a twin or triple needle, insert in the same way.

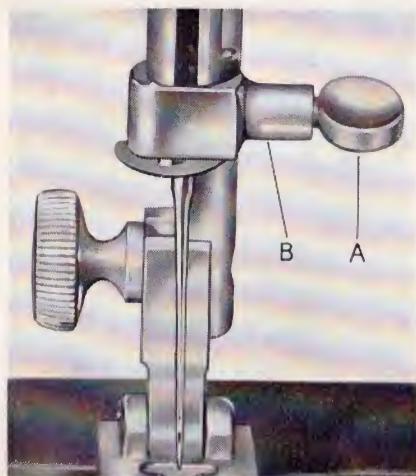


Fig. 3.

Removing the bobbin case from the shuttle

Turn the hand wheel (Fig. 1) towards you until the needle is in its highest position. Open the shuttle access door (22, Fig. 1).

Take hold of the bobbin case with the thumb and forefinger (Fig. 4), so that the latch (A, Fig. 5) is depressed, and lift the case out.

As long as the latch is depressed, the bobbin is held in its case. To remove the bobbin, release the latch and turn the case downwards. The bobbin then falls out.

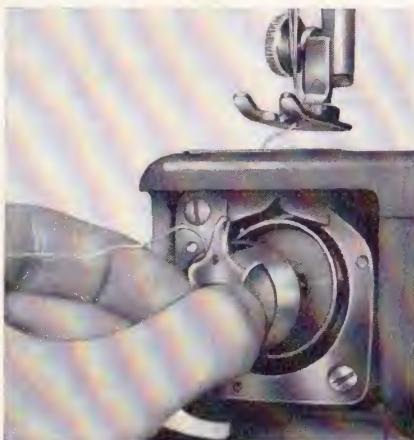


Fig. 4.

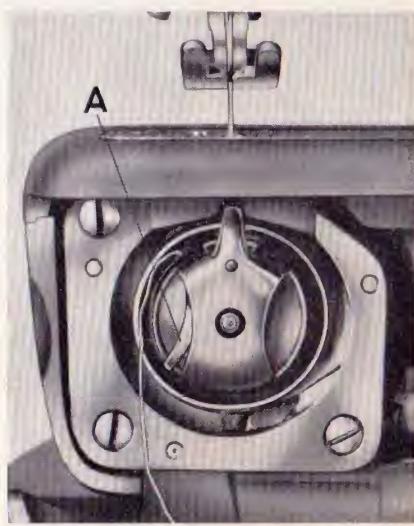


Fig. 5.



Fig. 6.

Bobbin winding is simple

Place a spool of thread on the spool pin nearest the hand wheel. Run the thread through the thread guide (A, fig. 6) and down under the guide (B) on the tension device and back between the tension discs (C).

Wind the thread two or three times around the bobbin (D), and push the bobbin as far as it will go onto the winder spindle. This automatically disengages the sewing mechanism.

Start the bobbin winder by pressing the foot pedal, and wind at a moderate speed. Stop winding when the bobbin is filled to about $1/16$ in. from the rim.

The spindle automatically engages the sewing mechanism again, when the bobbin is pulled off.

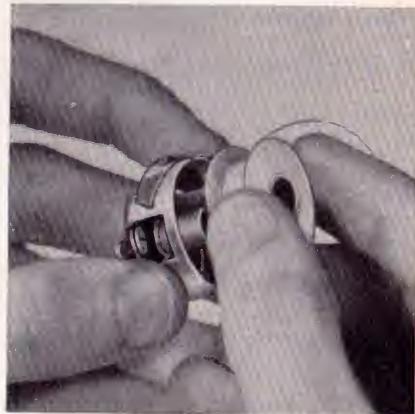
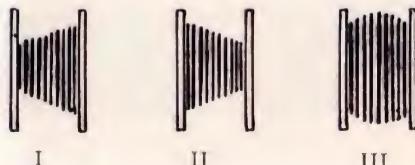


Fig. 7.

Bobbin must be evenly wound to produce an even seam

If you find the machine is winding unevenly as in (I), loosen the screw (34, Fig. 2) and move the tension device slightly inwards toward the machine. Tighten the screw and test to see if the winding is now even. If the machine winds unevenly in the other direction, as in (II), move the tension device outwards, to the right. A correctly wound bobbin should look like (III) (somewhat higher in the middle).



Threading the bobbin case

Hold the bobbin case in your left hand with the slot in the edge upwards or facing you (Fig. 7). Take the bobbin in your right hand, so that the thread end leads away from you, and drop it into the case. Then, still with your right hand, draw the thread into the slot in the edge of the case (Fig. 8).

Now lead the thread under the tension spring and let it come out at the notch in the end of the spring (Fig. 9). Pull the thread out a few inches, and check to see that the bobbin rotates clockwise in the case.



Fig. 8.

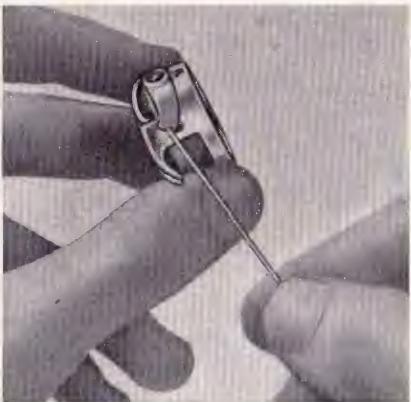


Fig. 9.

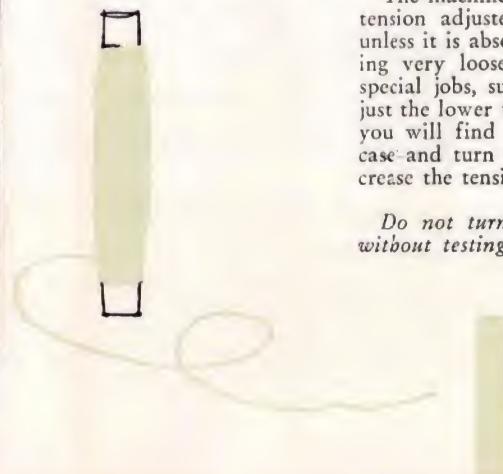


Fig. 10.

Lower thread tension

The machine comes from the factory with the lower thread tension adjusted for normal use. Do not alter the tension unless it is absolutely necessary — as for example, when sewing very loosely or tightly woven fabrics, or when doing special jobs, such as sewing buttonholes, eyelets, etc. To adjust the lower thread tension, use the small screwdriver which you will find in the attachment box. Take out the bobbin case and turn the spring screw (Fig. 10) to the right to increase the tension or to the left to decrease it.

Do not turn the spring screw more than 1/8 of a turn without testing to see if the adjustment is sufficient.



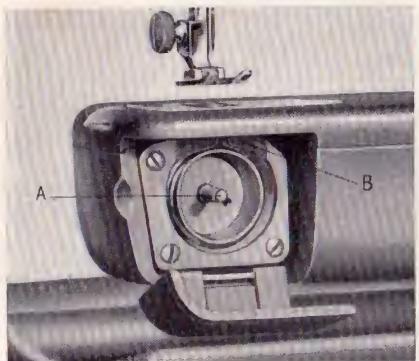


Fig. 11.

Inserting the bobbin case

Turn the hand wheel (Fig. 1) towards you until the needle is in its highest position. Open the access door (22, Fig. 1) and pick up the bobbin case with the thumb and forefinger, gripping the latch (A, fig. 5) firmly so the bobbin does not fall out.

Push the bobbin case onto the centre post of the shuttle (A, Fig. 11), with its projection upwards so as to fit the notch (B) in the shuttle race. Press the case firmly into place.

Leave the thread end hanging down from the bobbin case, and close the access door.

Upper thread: This is the way to thread it

Bring the thread take-up lever (6, Fig. 12) to its highest position by turning the hand wheel towards you. Put a spool of thread on one of the spool pins (39, Fig. 2).

Pass thread through the thread guides (1 and 2, Fig. 12), then round from right to left between the innermost tension discs (3), over the crotch of the thread take-up spring (4), under the slack thread regulator (5) and up through one of the eyes in the thread take-up lever (6). From the take-up lever take the thread down through thread guide (7) and the guide on the needle clamp (8) and thread it through the needle point, pulling out 3 or 4 inches behind.

To sew with twin or triple needles, you thread the machine with two or three threads in the same way as with one, except that the threads are passed between separate pairs of tension discs and through separate holes in the take-up lever (6).

Once the machine is threaded, be careful not to run it unless there is some fabric between the presser foot and the throat plate.

Upper thread tension

The tension of the upper thread is regulated by the pressure of the tension discs (3, Fig. 12) against each other. This pressure is adjusted by means of a knob calibrated from 0 to 9 with 0 as lowest

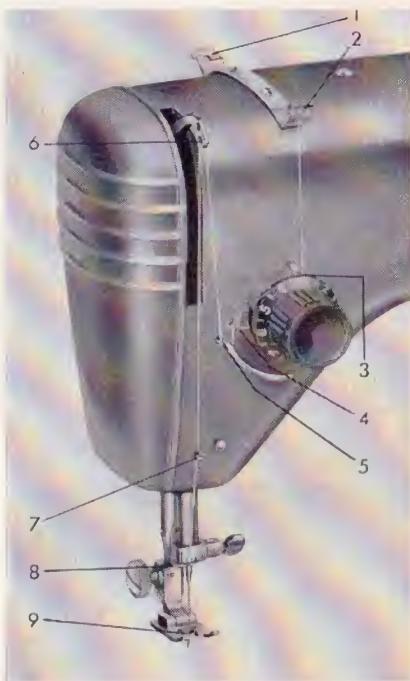


Fig. 12.

and 9 as highest thread tension (Fig. 13). When the machine leaves the factory, it is adjusted for linen-sewing with mercerized thread No. 50. Normal tension 3—5.

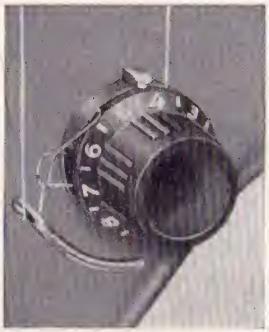


Fig. 13.

Correct tension

When the tension of the upper and lower threads is correctly regulated, the stitches look alike on both sides of the material. The ticing up then occurs in the middle of the layer of the material.



Upper thread tension too tight

Upper thread is stretched out along the top of the material, while the lower thread is pulled up in small loops. (This will also happen if the tension of the lower thread is too light, but always try to correct by adjusting the upper thread tension.) Loosen the upper thread tension by turning the knob to a lower figure.



Tension of upper thread too light

Lower thread is stretched along the underside of the material, and the upper thread pulled down in loops. (Again, this will happen with too tight a tension on the lower thread, but before adjusting the lower thread tension, try adjusting the tension of the upper thread). Increase the upper thread tension by turning the knob to a higher figure.



Bringing up the lower thread

After the upper thread has been threaded through the needle, hold the end loosely in your left hand, and with your right hand turn the balance wheel slowly towards you so that the needle goes down and comes up again to its highest position.

Now pull the upper thread, and the lower thread will come up through the hole in the throat plate (Fig. 14).

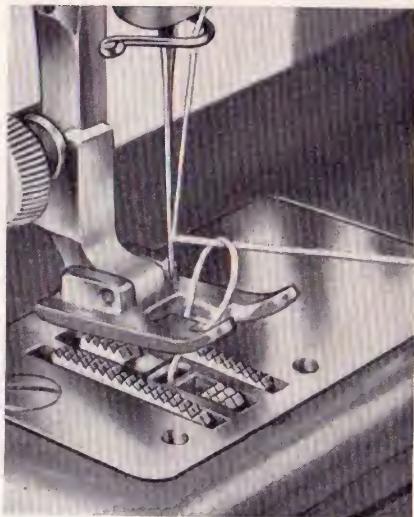


Fig. 14.

Increasing and decreasing of pressure of the presser foot

If the pressure on the presser foot is insufficient, increase it by turning the regulating screw (A, fig. 31) to the right; if pressure is too great turn the screw to the left.

The feed dog

When darning, embroidering, sewing on buttons, etc., you want the fabric to be free so you can move it by hand in any desired direction. This is made possible by lowering the feed dog (24, Fig. 1).

To lower the feed dog, turn the knob (21, Fig. 1) half a turn to the right — so the mark on it points downwards.

When you want the feed mechanism to function again, simply turn the drop-feed knob to the left so that the mark comes uppermost.

Now we
are ready
to sew!



Ordinary straight stitching

The Husqvarna Zig-zag does straight sewing and ordinary zigzag stitching. Each of these two sewing techniques will be dealt with in turn.

When all is said and done, straight stitching remains the most important function of a sewing machine. With its jam-proof shuttle, the Husqvarna Zig-zag produces an excellent straight stitch. This shuttle is designed so as to release exactly the same length of thread at each revolution — no matter how fast the machine is run. A further advantage is that the zigzag mechanism is completely disengaged when the machine is doing straight stitching.

Now, if you have selected the right needle and thread, and have checked the thread tension, we are ready to start sewing.

The machine sews straight when the zigzag width control (20, Fig. 1) is set at 0.

Place the fabric under the presser foot and lower the presser bar. Place the motor foot control for greatest comfort and start the machine by depressing it gently. Remember that with the Husqvarna Zig-zag you have no need to manipulate the hand wheel to help the machine get started or slow it down. The foot control ensures smooth starts and accurate stopping — thus leaving both hands free for sewing.

Mind you, start the seam in the fabric, not outside.

When you have got the seam started, the machine speed can be increased as desired. Regulate the sewing speed by means of the foot control *only* — and never try to alter the rate of feed by manipulating the fabric. If you try to pull the fabric forward or hold it back, you may even damage other moving parts of the machine.

Turning a corner

To turn a corner, stop the machine with the needle in the fabric, raise the presser foot and rotate the fabric around the needle until it is in position for the new seam. Then lower the presser foot and continue sewing.

Setting the stitch length

You can obtain different lengths of stitch by turning the stitch length knob (Fig. 15). The knob is graduated from 0 to 4, each of these units representing one millimetre. (N.B. 1 m. m. is approx 1/25 inch.) To facilitate accurate sewing of buttonholes and decorative stitching, the knob has an even finer graduation between 0 and 0,5 each mark representing one-tenth of a millimetre (or about 1/250 inch.).

Speed reducer for extra slow sewing

Reverse stitching, locking seams

When you want to sew backwards, for instance at locking seams, press in the knob (A fig. 15). The machine moves the fabric backwards with unaltered stitch length, as long as the knob is pressed in.

When you want to make a long seam backwards, press the knob inwards—downwards, and the knob will be locked in this position. When reverting to sewing forwards, press the knob inwards—upwards.

Finishing off

After stopping the machine, turn the hand wheel towards you until the needle is in its highest position. Raise the presser foot lifter (27, Fig. 2) and draw the work out backwards — away from you. Pull out the thread 4-5 inches, and cut it off against the thread cutter at the back of the presser bar (28, Fig. 2).



Fig. 15.



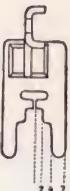
Fig. 16.

You will find the special speed control invaluable when you want to sew particularly slowly — for instance, when doing careful work or embroidering. The reduction gear is engaged by pulling out the knob (Fig. 16) as far as it will go. This causes the machine to sew at about one-fifth its normal speed.

The speed reducer enables you to sew extremely slowly, stitch by stitch, and thus gives you complete control.

Push the knob in, and the machine again sews at normal speed.

Presser foot as guide



Even those who are used to sewing on a machine sometimes have difficulty in running a straight seam. This difficulty can be overcome simply and easily, by learning to use the presser foot as a guide.

You can use the edge of the presser foot as a guide by letting the edge of the fabric (or a previous seam) run past it. Alternatively, let the edge of the cloth or a row of stitching pass at a certain distance from the steps in the presser foot or from its edges.

The distance from the needle to the outer edges of the presser foot is $9/32$ in. (7 mm). If you let the edge of the material run along the edge of the presser foot, the stitching will of course also be $9/32$ in. (7 mm) from the edge. But if you guide the fabric by the first step in the presser foot, you get a distance of only $5/64$ in. (2 mm), which is suitable for stitched edges, raised seams, etc. From the second step in the presser foot to the needles is $5/32$ in. (4 mm).

You can also guide the edge of the fabric or the stitching directly under centre line of the right-hand toe of the presser foot, or at a certain distance from centre line. This leaves a suitable space for gathering. Whatever you use as a guide, though, the main thing is to keep the same distance all along the row.

Gathering

Simple gathering

Use the jointed presser foot (S 15229, inside front cover) which is mounted on the machine on delivery. Stitches should be rather long, and the upper thread tension sufficiently light to enable the lower thread to be pulled. Sew as usual, but preferably stitch two rows, using the presser foot as a guide. Instructions on page 10 tell you how to do this. When both rows have been stitched, pull the lower thread so as to form gathers in the fabric (Fig. 17).

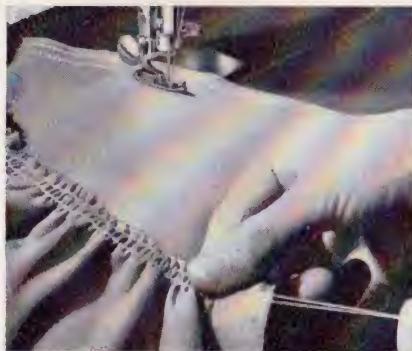


Fig. 17.

Gathering with elastic thread

By using Lastex thread you can make elastic gathers. Wind the elastic thread by hand on to the bobbin, and use ordinary thread for the upper thread. This



Fig. 18.

kind of gathering is especially suitable for underwear, children's clothes, beachwear, etc.

... or elastic band

By using zigzag stitching, you can also gather over an elastic band. To do so, stretch the band while sewing; the fabric then gathers naturally (Fig. 18).

Advantage of zigzag

By making it possible to do hand finishing by machine, the Husqvarna Zig-zag has revolutionized home sewing. This machine turns out straight stitching and zigzag work with equal elegance — enabling you to sew complete garments by machine and thus avoid the wearisome hand work which was formerly necessary for finishing off.

Now we are going to show you how to do hand finishing by machine.

Setting the controls for zigzag stitching

The machine is set for straight stitching when the zigzag width control (20, Fig. 1) is at 0. Settings 1 to 4 make it sew zigzag stitches of increasing width — up to 5/32 in. (4 mm).



Overcasting edges

Machine overcasting done with the Husqvarna Zig-zag (Fig. 19) looks better and is actually stronger than when done by hand. You can do it so much quicker, too.

Use the regular presser foot and set the zigzag width control at 3 or 4. For the stitch length, setting at 2 or 3 is usually about right. If the fabric is very loosely woven, however, you should increase both the bight setting and the stitch length to 3½ or 4. If in doubt, test the settings on an odd scrap of material before starting to sew.

Place the edge which is to be overcast under the presser foot so that the needle just clears the material with each right-hand stroke.



Fig. 19.



Using the zigzag to sew buttonholes

Set up the machine like this:

1. Exchange the regular presser foot for the buttonhole foot (S 15428, inside front cover).
2. Switch the knob (15, Fig. 1) controlling the needle starting position to the left.
3. Try to get a suitable stitch length by switching the knob (16, Fig. 1) to 0.2—0.3.
4. Set the zigzag width control (20, Fig. 1) at 2.
5. Adjust the gauge on the buttonhole-foot (A, Fig. 20) to the length required for the buttonhole. The size of the buttonhole will correspond to the distance from the needle to the gauge. (Make buttonhole about $3/16$ to $1/4$ in. longer than size of button.)
6. Loosen the tension of the upper thread by turning the tension regulator knob (11, Fig. 1) to the next lower figure. This will cause the upper and lower threads to lock at the underside of the fabric. Check to see whether you get a good looking stitch by sewing on a scrap of material.

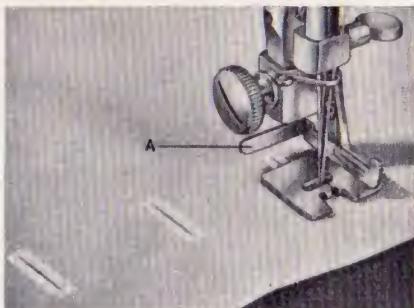


Fig. 20.



Fig. 21.

Then, to sew the buttonholes:

1. Mark off the length of the buttonhole on the fabric.
2. Place one end of the buttonhole marking under the needle, with the rest facing towards you. Lower the presser foot and start sewing. Stop when the first stitch reaches the gauge (A, Fig. 20).
a
3. See that the needle is in the material, and in its right-hand position. The part you have sewn should now look like (a).
Needle is here →
4. Raise the presser foot and turn the work round the needle. The buttonhole will now look like (b).
Needle is here →
b
5. Lower the presser foot and raise the needle.
6. Set the zigzag width control (20, Fig. 1) at $3\frac{1}{2}$, drop the feed dog by turning the knob (21, Fig. 1) and sew three or four stitches on top of each other to form the first closing bar. Stop the machine with the needle raised. The half-finished buttonhole will appear as in (c).
NEUTRAL FEED DOG.
c
7. While the needle is still raised, press in the stop (Fig. 21) and turn the control to the right. The stitch width will then be automatically stopped at $3/32"$ (2 mm). Then sew the second line of stitches, stopping the machine when the needle is in its lefthand position. The buttonhole, almost finished, now looks like (d).

d

8. Turn the control to the left, setting at 4. Make the second closing bar by sewing three or four stitches on top of each other as before—and you have a finished buttonhole as in (e).

e

9. Lock the threads by moving the width control to 0. Move the stop (Fig. 21) backwards, and sew a few stitches. (Remember to keep the needle raised when you alter the bight settings.)

10. Carefully cut the material between the two rows of stitches with the buttonhole cutter (S 15399, inside front cover) which is included among the attachments (Fig. 22).

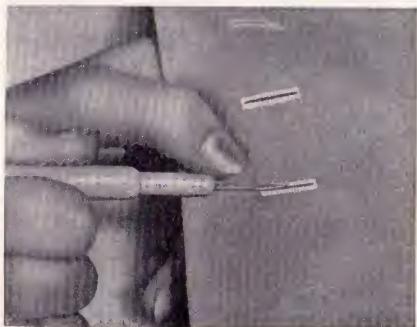


Fig. 22.

Corded buttonholes

In soft woollens, and garments in which the buttonholes are particularly subject to wear, it may be wise to sew corded buttonholes (Fig. 23).

A corded buttonhole is made in exactly the same way as an ordinary buttonhole, except that a gimp is sewn in as well. It is best to start from within the garment and work toward the edge, so that the gimp goes round that end of the buttonhole which is most subject to stress.

Machine sews on buttons too

Fit the button hole foot (S 15428 inside back cover) on the presser bar and drop the feed dog by turning the knob (21, Fig. 1). Switch the needle position knob (15, Fig. 1) to the left starting position, and set the zigzag width control (20, Fig. 1) at 3.



Fig. 23.

Place the work under the button foot so that two of the holes in the button come under the needle opening in the foot. Slowly turn handwheel to check whether the needle passes through the centre of each hole on its left and right-hand strokes. If necessary, move the button or alter the bight setting. Sew on the button with 5 or 6 stitches, and lock the threads by sewing a few stitches into the same hole (making sure the needle is up before you move the bight setting to 0). When attaching four-hole buttons, first sew two holes and then move the work to the next pair of holes. (Fig. 24.)

Making bar tacks for pockets

Set the zigzag width control at $1\frac{1}{2}$, and the stitch length almost at 0. Then sew bar tacks, about $\frac{1}{4}$ in. (6 mm) long, across the seam at either end of the pocket.

Lock the threads by straight stitching a couple of times—with the width control at 0 and the feed dog lowered.

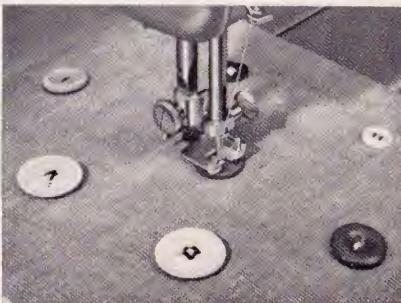


Fig. 24.



Fig. 25.

Picot

This is produced by sewing small zigzag stitches over a folded edge and is an attractive way of finishing off ruffles, flounces, insertions, etc.

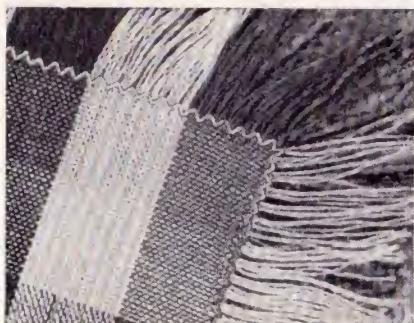
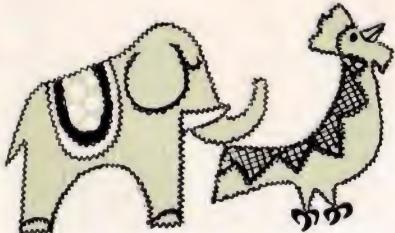


Fig. 26.

Fringing

Whenever you want to prevent threads from becoming unravelled, fringe the edge with zigzag stitching.



Applique

The applique technique would appear to have been introduced specially for the zigzag sewing machine. Pleasant and often amusing effects can be obtained simply and easily by appliqueing flowers, animals, initials — and decorative designs generally — to tablecloths, pillows, bed-spreads, children's clothes and many other things too.

Try out the stitch length and stitch width on the material you are going to sew. You can either:

1. Cut out the applique design and attach it either with very close or somewhat wider spaced zigzag stitches with the stitch width control set at 2.
2. Outline the design on the material, without cutting it out, and then run narrow, short zigzag stitches around the contour. The controls for stitch width and stitch length should both be set at 1 for this. Trim off the material close to the stitching and sew along the edge with close zigzag stitches and a wider bight setting. The upper thread tension should also be rather light in order to make the seam lie properly.

Quick-Monogramming

Your Husqvarna Zig-zag can be very quick and effective in monogramming towels, etc. and this is carried out as follows, the monogramming being extremely durable.

Draw the outline of the monogram on the material to be used and place a piece of cotton yarn along these outlines and then zigzag over the yarn with a stitch-length of about 2 mm ($\frac{3}{32}$ ") and zigzag width of 2 mm ($\frac{3}{32}); the actual length and width you use will depend on the thickness of the yarn. Sew only a few stitches at a time, preferably using the reduction gear.$



Fig. 27.

**Here are
directions for
sewing on lace**

Attaching lace edging

Set the stitch width and stitch length controls to produce a zigzag stitch suitable for the fabric to which the lace is to be attached. Use a darning or embroidery thread which is intended for sewing machines — your Husqvarna dealer has it.

Lace edging can be attached in various ways:

1. Attach with zigzag stitches a short distance from the edge of the material and trim off the fabric close to the seam.
2. After attaching with straight stitches a short distance from the edge, fold over the fabric along the seam (on the wrong side, of course) and sew it down with small zigzag stitches over the straight stitching. Finish by trimming away the superfluous material. This method makes a stronger joint, and is recommended when attaching lace to loosely woven fabrics.
3. Place the edge of the lace close along the folded edge of the material and sew with zigzag stitches. Make sure that the needle stitches alternately into the material and the lace (Fig. 28).
4. Attach to pillowcases and sheets by sewing with zigzag stitches to the hem.

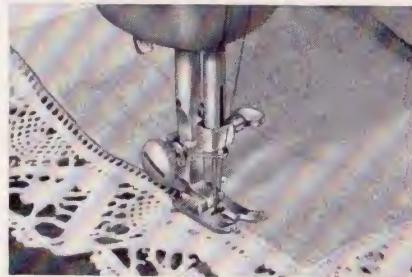


Fig. 28.

Lace insertions

Lovely lace insertions are easily sewn with zigzag stitching. Using a fine needle and thread — preferably machine darning or embroidery thread — sew short, narrow zigzag stitches. If you like, you can make the stitching so short and narrow that it looks like a bar tack — but be sure that the needle stitches alternately into the material and the lace insertion. Finally, turn the work over and trim the fabric to about $\frac{1}{8}$ in. (3 mm) from the stitching. Your insertion is ready!

Sewing with twin and triple needles

With twin and triple needles you can sew a great variety of fancy seams — gathered and raised — which can be most effective on dresses, blouses, tablecloths, place mats, curtains and so on.

A size 14 (90) twin needle, with a spread of 5/64 in., is provided with the machine. If you want needles with a different spread (distance between the needles), you can obtain them from any Husqvarna dealer.

For heavier fabrics you need a greater distance between the needles to get the right effect.

Zigzag Sewing with twin and triple needles

When sewing with twin and triple needles the maximum zigzag width is automatically decreased, depending on the increased needle distance. It is important therefore that the following maximum widths are not exceeded, otherwise a broken needle may result.

Twin	1/16 in. 1,6 mm	needle spread — max. zigzag width	1/8 in. 3 mm
	5/64 in. 2 mm	" " — " "	3/32 in. 2,5 mm
	1/8 in. 3 mm	" " — " "	1/16 in. 1,5 mm
	5/32 in. 4 mm	" " — " "	0 in. 0 mm
Triple	3/32 in. 2,5 mm	" " — " "	5/64 in. 2 mm
	7/64 in. 3 mm	" " — " "	1/16 in. 1,5 mm

Before you start sewing with twin and triple needles . . .

Before actually sewing, it is best to experiment a little on a scrap piece of material to make sure you get seams of the desired height and width. The kind of

seam produced depends largely on the material. Check also to see whether the weave permits sewing seams that cross each other — as not all fabrics allow this. With some materials it is impossible to sew a raised seam on the bias.

Use the regular presser foot. With the twin needle supplied with the machine you can do straight stitching and zigzag up to dial setting 3.

Make absolutely sure that the needles clear the opening in the presser foot. Otherwise you may find yourself with a broken needle.

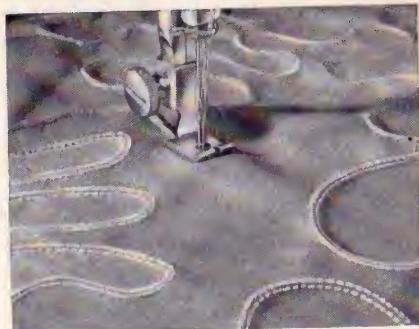
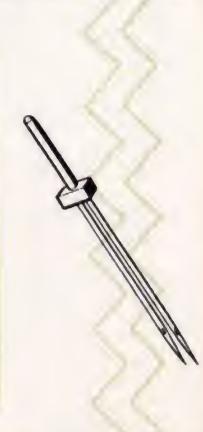


Fig. 29.

Raised seams with cord insertion

To sew these you need the twin-needle presser foot (S 15419) and the raised seam attachment (S 15427, inside front cover). Fit the raised seam attachment in the holes in the throat plate and insert the cord as shown in Fig. 30. When you sew, the cord will be sewn in, forming a firm raised seam.

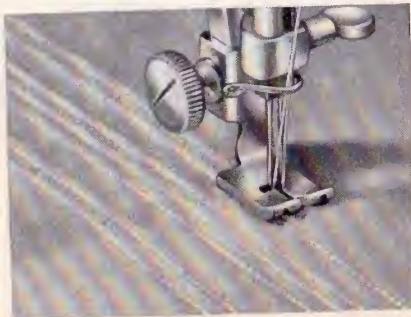


Fig. 30.

Darning

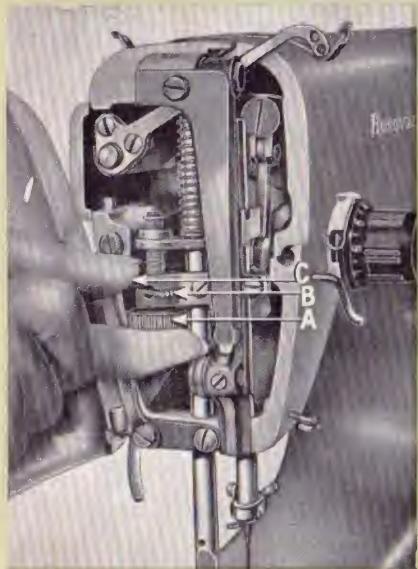


Fig. 31.

To adjust the pressure on the presser foot:

1. Screw A reduces pressure when turned to the right and increases it when turned to the left. (When your machine leaves the factory, pressure has been adjusted for normal sewing.)
2. To remove the pressure completely, turn lever B to the left.
3. When C is pressed down and screw A pressed up simultaneously, the machine reverts to previous pressure.
When making adjustments, the presser foot lifter must be lowered.

Darning and mending can be done quickly and easily on the Husqvarna Zig-zag. The quick release of pressure on the presser foot enables the standard presser foot to be used for this operation, instead of changing over to the special darning foot, thus saving time.

A simple turn of hand releases the pressure on the presser foot and when the darning or mending is finished a similar simple movement returns the presser bar to its previous position.

The method of darning is identical with that used with the darning foot, S 15460, which may still be used if preferred, but this necessitates the changing of the foot.

Techniques vary depending on whether you are doing ordinary darning, darning edges or corners, or darning to reproduce a pattern. But there are certain basic rules which are common to all these operations.

Basic rules

1. It is important that you select a suitable needle and thread that really matches it. For darning, a special thread should be used which you can obtain from your Husqvarna dealer.
2. Thread tension is important too. A lighter tension of the upper thread is required for darning than for almost any other operation. You can obtain the right tension by experimenting a little; but do not alter the lower thread tension unless it is absolutely necessary.
3. The feed dog should be lowered so you can make the stitches as required.
4. Use an embroidery hoop stretching the fabric over it and securing it firmly. To make sure that the material does not slip, it may be well to bind the inner ring of the hoop with tape. Such binding is also useful for holding the temporary threads used when darning edges.
5. When the material has been stretched over the hoop, place the work under the darning foot and lower the presser bar. Don't forget to lower the foot, otherwise you will get loops on the wrong side of the darn.
6. Bring the lower thread out on top of the material, and after locking the threads with a couple of stitches, cut them off.

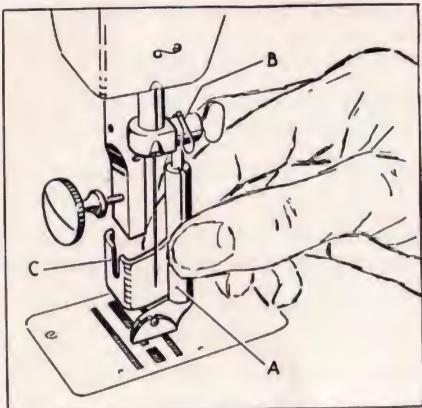


Fig. 32.

This is how you attach the darning foot

Move the needle bar up to its highest position and screw out the presser foot screw about $\frac{1}{4}$ in. Then, holding the darning foot by its tubular part (A, Fig. 32), hook the spring (B) over the needle clamp. Press the holder (C) hard against the presser bar, push it up under the screw, and tighten the screw.

Ordinary darning

Start by sewing backwards and forwards over the hole, making long stitches across the fabric (that is, in the direction of the selvage). Since the feed dog is inoperative, you have to move the work by hand. The quicker you move it, the longer will be the stitches. The darned spot will be stronger and less visible if the stitches run off unevenly into the fabric. When you have stitched in one direction,



Fig. 33.

turn the work around a quarter turn and work across. See Fig. 33.

Filling in can be done lengthwise, on the bias, or round in circles — all depending on the fabric. Move the work slowly, to keep the stitches short, and see that they match the material.

For a big hole you can use gauze as a base. Fold a piece double and lay it over the hole, then run a row of stitching around it about $\frac{1}{4}$ in. (6 mm) from the edge of the hole, and trim off. This saves you the trouble of "weaving" — all you need to do is to fill in.

Darning an edge

With the wrong side uppermost, stretch the fabric in the hoop so that the hole comes in the middle (Fig. 34). Then take a needle and thread and lace the free edge to the taped inner ring of the hoop. Having placed the work in the machine, bring up and lock the threads at the edge of the hole, and stitch four times up and down along the line of the new edge. Move the work quickly to make these stitches long. Then continue stitching parallel to the edge until the hole is covered. Fill in with short stitches (moving the work slowly) running at right angles to the edge, and finally reinforce the edge by stitching along it a couple of times.

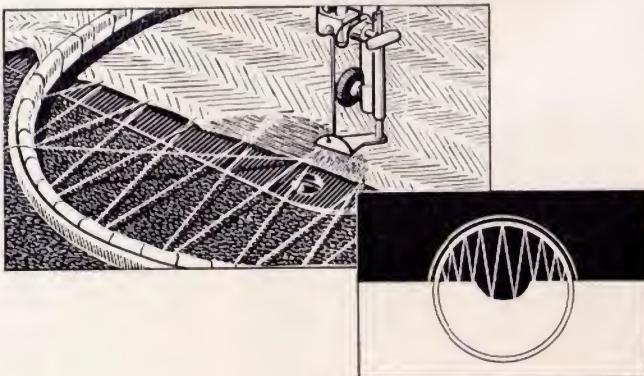


Fig. 34.

Darning corners

The simplest way to mend worn corners is to use tarragon or gauze as a foundation. Stretch the gauze in the hoop with the worn corner on top of it (Fig. 35). First sew around the edges, and then darn the worn part in the way best suited to the fabric. Sometimes buttonhole or plain stitching should be used to reinforce the edges. Trim off the gauze when you have finished.



Darning a patterned fabric

If the fabric has a pattern woven into it, you can hide the repair as follows (Fig. 36). Darn the hole first, then draw the missing pattern with a pencil. Remove the darning foot, and fill in the pattern by stitching at right angles to the stitches of the darn. If you follow the pattern closely, it will stand out and the darn will be less noticeable.

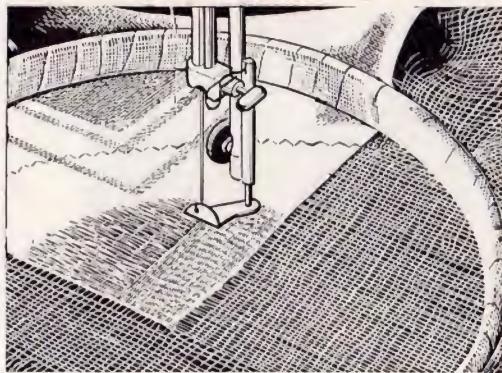


Fig. 35.

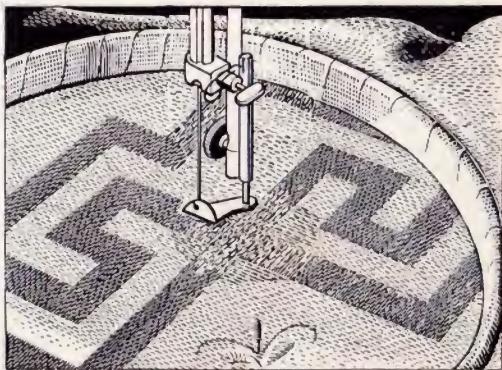


Fig. 36.



Fig. 37.

Mending Knitwear

You can use the zigzag stitch for this, too; it is particularly suitable as it makes an elastic type of seam which stretches with the material.

Patching Knitwear

Cut out a patch which overlaps the worn spot and place it in position. Then sew it on with zigzag stitches on the right side (as opposed to wrong side). Then cut away the worn material from the underside, cutting all round about 0.5 cm ($\frac{3}{16}$ ") from the stitching. Then sew all around the edge on the underside with zigzag stitches. You can add further reinforcement by sewing with zigzag stitches a second time.

Buttonholes

Worn buttonholes can be renewed quite easily with this zigzag machine.

Darning with wool

Set the stitch width at 3 and the stitch length at 0. Lower the feed dog and see that the upper thread tension is really light. Attach the darning foot.

Thread the machine with darning thread for sewing machines, and lead the upper thread down under the foot.

Draw the sock or stocking over the free arm so that the hole comes under the darning foot. Bring up the lower thread at the right edge of the hole, lower the presser bar and lock the threads with a few stitches.

If the hole is very big, it may be as well to sew round it with short, straight, stitches in order to make a firm edge.

Now take the woollen yarn, draw it through the oval opening in the darning foot, and lay it in the groove (A, Fig. 38).

Stretching the sock sideways with your fingers — in the direction of the knitting rows — move it backwards and forwards lengthwise to the machine, so that the wool crosses the hole from side to side. The thread, which follows along, sews

the wool into the edges of the hole (B, Fig. 38). When the hole has been completely covered in one direction, cut off the yarn and run zigzag or straight stitching across the darn with thread only (no wool).

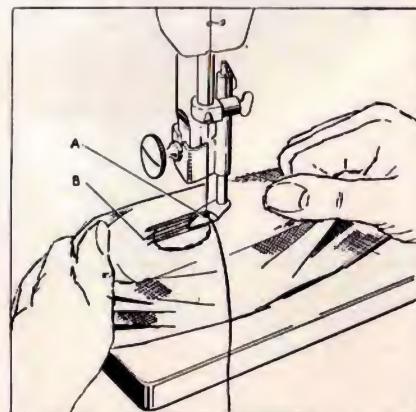


Fig. 38.

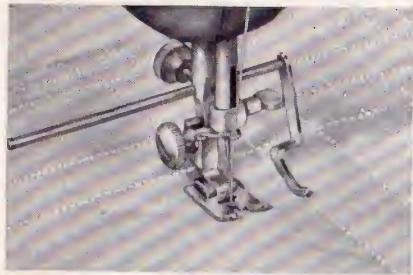


Fig. 39.

For quilting and marking, use the edge guide

You attach the edge guide (Fig. 39) by sliding it from left to right into the hole in the presser bar. Set it at the desired distance from the needle and fix it there by screwing the attachment screw into the hole in the back of the presser bar.

Use markings to guide you when sewing the first seam. To sew parallel rows of stitching, move the work to the right so that the row already sewn comes under the guide.

You will find quilting, as well as marking, quite easy when you use this guide.

**It's easier than you think it is
to sew a Zipper on!**



Fig. 40.

Zipper in centre of opening

Baste together the opening with long stitches and the upper thread lightly tensioned. Leave about $\frac{3}{4}$ in. (19 mm) open at the end. Force the seam apart and baste in the zipper by hand on the underside.

Change to the special presser foot for attaching zip fasteners (Fig. 40).

Open the zipper about $\frac{3}{4}$ in. (19 mm) and start stitching down the left side of the opening (with the work right side out). Stitch a bit, then leaving the needle in the fabric, raise the presser foot. Close the zipper and continue stitching round it. Finish off by opening the fastener slightly as before. Remove the basting.

Zipper under the fly

Baste the fly along the edge with long stitches and lightly tensioned upper thread. Then make a fold in the lower piece of cloth, about $\frac{1}{16}$ in. (1.5 mm) from the basting stitches, and stitch the zipper to it, beginning at the bottom and running the zipper foot closely along its right side. Open the zipper as above to finish off. Turn the garment around, and with the right side of the cloth still uppermost, stitch the other side of the zipper from the top downwards.

Making narrow hems

Among the attachments are hemmer feet for two widths of hem. To sew the hem shown below (Fig. 41), use the special hemmer foot No. 3035.

Remove the presser foot and attach the hemmer. Clip off $\frac{1}{8}$ in. (3 mm) or so from the corner of the fabric where the hem starts, and fold over the edge for about $\frac{1}{2}$ in. (13 mm) to a depth suited to the cloth and the hemmer foot. Sew a single stitch where the hem starts. Then holding the threads firmly with your right hand, lift the hemmer foot slightly in order to get the folded edge into the scroll more easily. Once started, the hemmer folds the fabric automatically — you just have to make sure that not too much cloth (particularly from a hard multiple-layer hem) gets into the scroll.

To produce an extra-narrow hem, use hemmer foot No. 3002 and sew as above.

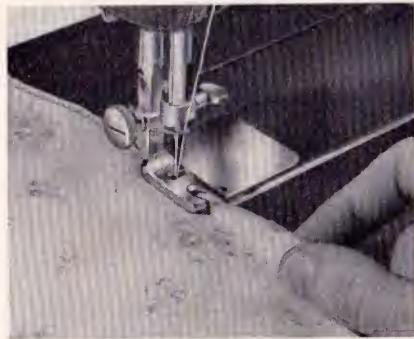


Fig. 41.

Felled seams

The hemmer feet can also be used for felling. Place the pieces of cloth one on top of the other bottom piece sticking out slightly — just enough to enable the lower edge to be felled easily without folding. When stitching the two pieces together, see that their edges are the same distance apart all the way.

After sewing together, spread out the work so that the hem stands up. Then insert the hem in the hemmer and run the second seam (Fig. 42).



Fig. 42.

Zigzag hemming

It is especially useful to be able to sew zigzag stitches when hemming garments of stretchable material, such as knitwear, tricot, etc.

You do this with the hemmer foot, in the same way as straight hemming, except that a zigzag stitch of suitable width is used (Fig. 43).

A decorative effect can be obtained, on children's clothes, for instance, by sewing the hem with a thread of contrasting colour.

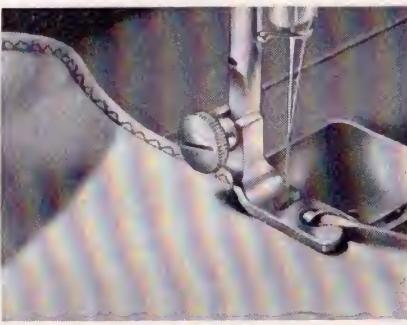


Fig. 43.

Rolled edges

To sew rolled edges (Fig. 44), use the narrow hemmer foot (S 15236, inside front cover).

Set the width control at 3 and the stitch length at 2 and insert the edge of the fabric in the hemmer in the manner described for making narrow hems.

See that the stitch straddles the hem — in other words, the needle should enter alternatively along the left and right edges. The tension of the upper thread should be rather tight.

Rolled edges look well on thin silk scarves, insertions, ruffles on curtains, etc. You can learn very quickly to sew the most beautiful rolled edges on the machine.

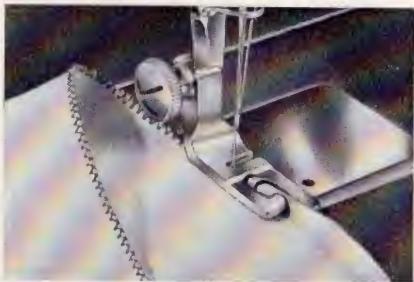


Fig. 44.

Shell stitching

The most appropriate application for shell stitching (Fig. 45) is when hemming light, soft materials like tricot, crêpe de chine, etc. When thus used, it gives the impression of French hand hemming.

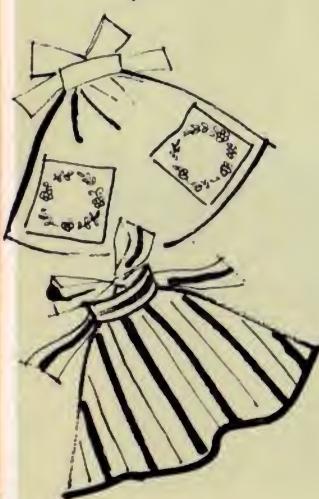
To do this you have to use the special hemmer foot, No. S 15240. Otherwise the procedure is the same as when sewing rolled edges, except that the settings for the zigzag width and the stitch length should both be increased to 4. Tension on the upper thread should be extra tight, so as to make each shell stand out prominently.



Fig. 45.



Give your
imagination
a free
rein!



All sorts of possibilities for embroidering on the machine

Feather stitch

This beautiful type of embroidery looks much more difficult than it actually is. To do it you use the regular presser foot and set the stitch width at 4. Stretch the fabric over an embroidery hoop (Fig. 46).

Run the machine at high speed, moving the hoop with the fabric stretched over it backwards and forwards to make the embroidery pattern.

Feather stitching can also be done with a twin needle and threads of different colours — with striking decorative effect. Feather stitching is suitable for embroidering place mats, aprons, bed jackets, blouses, etc.



Fig. 46.

Embroidery with zigzag stitching

is another type of embroidery which is easily carried out (Fig. 47). Start by outlining the contour of the pattern with fine zigzag stitches. Then remove the presser foot, and, with the feed dog lowered, cover the areas which are to be filled in, with rows of extended stitches all going in the same direction. To do this you move the hoop with the work stretched on it backwards and forwards. The zigzag width control's set at 1.5. Embroidery done in this way can be very goodlooking — producing somewhat the effect of applique.

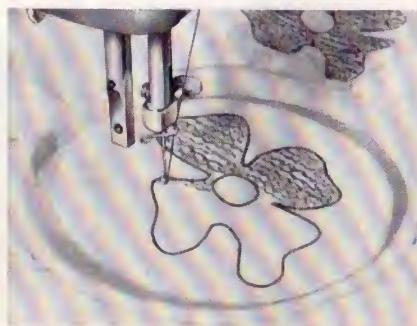


Fig. 47.



Eyelet embroidery attachment

With the aid of the eyelet embroidery attachment the Husqvarna Zig-zag permits the sewing of eyelets for embroidery, belts or lacing (Fig. 49).

Eyelets can be made on nearly all types of fabric, those tightly woven and not excessively heavy being preferable.

The thread for sewing eyelets should be selected corresponding to the kind of material used.

For sewing eyelets prepare machine and work as follows:

- a. Remove presser foot from presser foot bar.
- b. Select eyelet embroidery cover plate with center stud matching the desired size of eyelet ($\frac{1}{8}$ ", $\frac{3}{16}$ " or $\frac{7}{32}$ " diameter, fig. 48) and place it on the needle plate.
- c. Set needle position control (15, Fig. 1) to "left" needle position. Turn hand-wheel of machine towards you, making sure that needle passes through center of stud in cover plate.
- d. Adjust stitch width control (20, Fig. 1) to marking "3" on dial. Needle, on right hand stitch, should enter material well past the edge of hole.
- e. Stretch material tightly over an embroidery hoop and cut holes with scissors, a bodkin or stiletto in material where marked. Holes should be made small enough to fit snugly over the center stud of the respective cover plates, as this will produce better looking and more uniform eyelet embroidery.
- f. Adjust thread tensions by slightly loosening the tension of the needle (upper) thread. Increase somewhat the tension of the bobbin (lower) thread to obtain a desirable appearance of the eyelet embroidery.
- g. Place the hole in material over center stud on cover plate. Turn hand wheel towards you to pick up the bobbin thread, hold it and the needle thread down onto the cloth when making the first few stitches.
- h. Start sewing, turning the embroidery hoop two to three times slowly and uniformly clockwise around the center stud in the cover plate. To lock the threads of the embroidered eyelet, return stitch width control to "0" and sew once around with straight stitches.
- i. Even out the complete eyelet by turning a bodkin (stiletto) in it a few times.

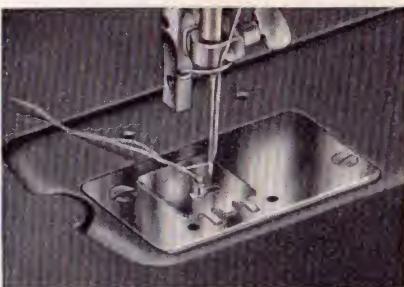


Fig. 48.

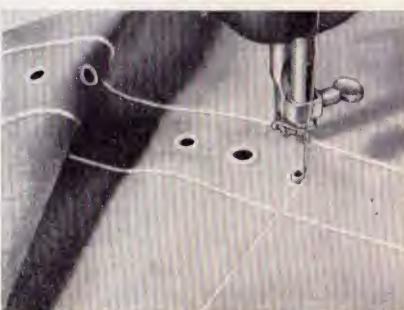


Fig. 49.

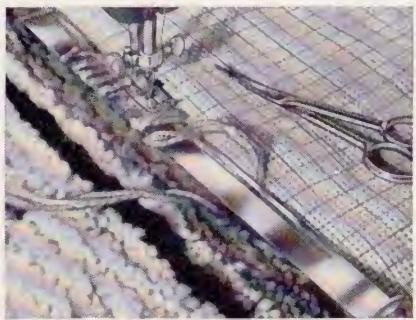


Fig. 50.

This is how you sew a "rya," rug . . .

When making a rug on the Husqvarna Zig-zag a so-called weaver's reed is used in combination with the regular presser foot (Fig. 50). This reed is a flat piece of steel with a long slot and a device for locking the ends together. The machine stitches along the slot, fastening the wool loops to the rug base.

In addition to wool for the pile, you need No. 40 sewing thread in the same shade as the yarn, and 110 or 120 size needle. Get the thread tension tight and set for medium-length stitches.

As a base for pillows or wall hanging, canvas can be very effective, but for rugs a heavy jute weave is best. Divide the base into $7/16$ in. (11 mm) squares with pencil lines, leaving about $3/8$ in. (9.5 mm) around the edges.

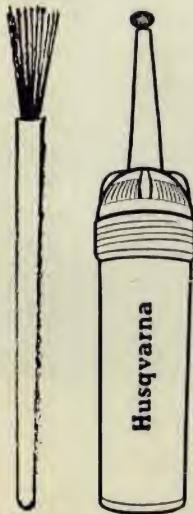
Lock the ends of the reed and wind the yarn loosely around it, in close turns. If you wind too tightly, the narrow tongue of the reed may come too close to the broad part, leaving insufficient space for the needle to stitch in — and a bent or broken needle may result.

Push the yarn up towards the middle of the reed, lower the presser foot and sew along the slot to fasten the loops to the base. Wind more yarn on the reed — changing colour as required by the pattern — and stitch again. Cut the loops as you go along, without removing the work from the machine.

Open the lock and move the reed forward as you sew. As each row is completed, turn the work round and stitch back again in order to fasten the loops extra firmly. Repeat the whole procedure row by row until the rug is finished.



A sewing machine needs proper care



Look after your Husqvarna Zig-zag

It's surprising how many people have never taken the trouble to find out how a sewing machine should be cared for. True, sewing machines are unusually tough pieces of equipment, which will go on working for years without being oiled or cleaned. But they don't like it, and they proclaim their dislike by running roughly and making a whining, scraping noise.

Like any precision-made machine, the Husqvarna Zig-zag will always operate smoothly, silently and efficiently if it is properly attended to and oiled regularly.



Fig. 51.

Oiling

If it is continuously in use, the machine should get a drop of oil once per week in places indicated by arrow (Fig. 51 opposite). If used only occasionally, oil every three months.

Oil *extremely sparingly*. Over-oiling doesn't help — it causes the oil to run out and stain the work when you are sewing.

Other places where the machine needs oiling occasionally are shown by arrows in Fig. 52.

The jam-proof shuttle *never* needs oiling — one of the reasons why your Husqvarna Zig-zag is unusually easy to look after.

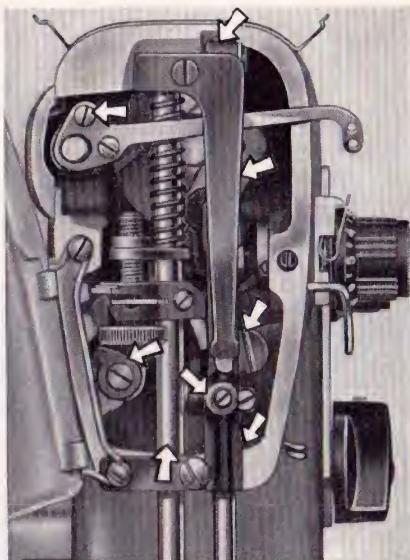


Fig. 52.

Cleaning

To clean the machine, use the brush you will find in the attachment box. Open the cover plate at the left end of the upper arm and brush off the fuzz that has accumulated in the mechanism. Then screw off the throat plate and brush the feed dog clean — brushing underneath the teeth as well as between them (Fig. 53).



Fig. 53.



How to remedy some of the most common sewing machine troubles

Machine running roughly:

1. Cause may be lubrication with lowgrade or unsuitable oil. Pour a few drops of kerosene in each oil hole and let the machine run for a few seconds. Then oil with high-grade sewing machine oil.
2. Drive belt may be too tight. Call your Husqvarna dealer.

Machine not feeding properly?

1. Make sure the stitch length control (16, Fig. 1) is not set at 0.
2. Feed dog may be lowered. Drop feed knob (21, Fig. 1) should be turned so that the white spot is on the top.
3. Insufficient pressure on the pressure foot. Increase the pressure by turning the regulating screw (A, Fig. 31) to the right.

Bobbin winding irregularly:

1. See if the machine is correctly threaded for winding.
2. The thread may not lie between the tension discs (C, Fig. 6).
3. Tension device may not be set in correct position. See page 7.

Upper thread breaks:

1. Needle not inserted correctly. See Fig. 3.
2. Machine not threaded properly. See Fig. 12.
3. Tension on the upper thread too tight. See page 7.
4. Knots in thread.
5. Needle too fine for the thread used. See Table, page 2.
6. Needle bent or point broken. Change needle.

7. Edges of the stitch hole in the throat plate may be nicked and sharp. Either hone them smooth or get a new plate.

Lower thread breaks:

1. Bobbin case not inserted correctly. See page 3.
2. Lower thread tension too hard. See page 5.
3. Bobbin case not threaded correctly. See page 5.
4. Bobbin wound unevenly.
5. Bobbin wound too fully.
6. Poor quality thread.
7. Damaged hole in the throat plate. Hone or replace plate.

Lower thread doesn't come up.

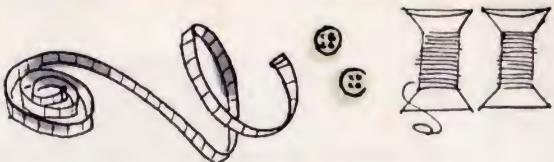
1. Needle inserted incorrectly. See Fig. 3.

Needle breaks:

1. Don't try to help the feeding by pulling the fabric. If you do, the needle may easily hit the throat plate and break off.

Machine sewing poorly:

1. Needle bent or blunted. Insert new needle.
2. Needle inserted incorrectly. See Fig. 3.
3. Machine threaded incorrectly. See page 6.
4. Wrong size of needle used. See Table, page 2.
5. Thread too heavy for the needle.
6. Insufficient pressure on the presser foot, especially when sewing thick fabrics. Turn the pressure regulating screw (A, Fig. 31) to the right.
7. Bobbin unevenly wound. See page 4.
8. Upper thread tension not properly adjusted. See page 7.
9. Lower thread too heavy. Should at least be of the same size as the upper thread, or a little finer.



10. Upper thread or needle not suited to the material. See Table, page 2.

Stitching loosely — with loops at the underside of the material:

1. Machine not threaded correctly. See page 6.
2. Presser foot not let down properly.
3. Upper thread tension too light. See page 7.
4. Thread take-up spring (12, Fig. 1) bent or broken off.
Adjust or replace it.

Thread tension uneven:

1. Poor quality thread is a likely cause.

Wrinkling of material:

1. Needle thread tension too tight.
2. Needle and bobbin thread tensions too tight for material used.
3. Presser foot pressure too great. Turn regulator screw to left (A, Fig. 31).

Stitches of varying lengths:

1. Feed dog is clogged with lint. Clean it out (See page 28 fig. 53).
2. Worn teeth in feed dog. Replace feed dog.

Loosely stitched seams:

1. Upper (needle) and lower (bobbin) thread tensions too loose. See page 7.

Cloth gets chewed up:

1. Too much pressure on the presser foot. Reduce by turning the pressure regulating screw (A, Fig. 31).

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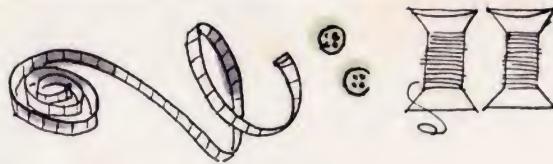


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Please note

The manufacturer of the Husqvarna Zig-zag does not consider the machine sold until you are really satisfied and have found how to get the best out of it. If there are any questions to which you cannot find an answer in this manual, we suggest you turn to your Husqvarna dealer.

If the machine should not operate satisfactorily, do not try to adjust or repair it yourself. Let an authorized Husqvarna dealer look at it, and thus ensure getting the best possible service.

Your Husqvarna Zig-zag deserves it!



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